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ABSTRACT

This paper addresses the issues surrounding the widely publicized problem of newborn infants who have been exposed to cocaine before their birth, and suggests ways to prevent the problems associated with fetal exposure to drugs during pregnancy. The paper presents information concerning the effects of prenatal cocaine exposure on infants, toddlers, and school-age children, and the extent of the problem. It is recommended that all pregnant women have access to affordable drug treatment and comprehensive prenatal care. Cocaine-exposed children should: (1) be considered part of the at-risk group eligible for services under the Individuals With Disabilities Act; (2) have access to Head Start programs that have the resources to deal with the problem; (3) be instructed by teachers who have been trained to be aware of the social environment of cocaine-exposed babies and the resources teachers can use to help these children; and (4) have universal access to comprehensive health and social services. Early educational and psychosocial intervention can help ensure that cocaine-exposed children will enter school prepared to achieve their educational potential. Information on the National Health/Education Consortium, and a list of its members, are provided. (MDM)

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National Commission to Prevent Infant Mortality

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Cocaine-Exposed Children: A Growing Health/Education Issue

*National Health/Education Consortium
Occasional Paper #3*

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Introduction

This paper, the third in the National Health/Education Consortium's series of "Occasional Papers," addresses an issue increasingly in the spotlight: cocaine-exposed newborns, or crack-babies, as they are often called. This paper does not purport to be a scientific synopsis. Rather, it has been written to provide educators, health professionals, program administrators, policymakers and others working with children and their families with an overview of how cocaine and general drug use during pregnancy affects the health and ultimate learning potential of infants. The paper, perhaps more importantly, will also offer action steps that can help prevent the problems associated with drug exposure during pregnancy.

The National Health/Education Consortium (NHEC), initiated in 1990, is a coalition of 51 national health and education organizations. The Consortium, convened by the National Commission to Prevent Infant Mortality and the Institute for Educational Leadership, was formed in response to the growing awareness of the connection between children's health and their ability to learn. Neurobiological, clinical and behavioral research demonstrate the inextricable connection between the healthy physical and emotional development of children and their learning potential. Increased reports of cocaine and general drug use during pregnancy have heightened the need for understanding and action by individuals working with these vulnerable children and their families.

Cocaine-Exposed Children: A Growing Health/Education Issue

Even though the issue of "crack babies" (babies exposed to crack-cocaine before birth) has only been brought to light fairly recently, substance abuse during pregnancy is not a new phenomenon. For years, for example, alcohol, which causes Fetal Alcohol Syndrome, has been a leading cause of mental retardation in newborns. Tobacco use continues to greatly contribute to the number of premature births. But none of those issues have been making front page news.

Not until crack, a smokeable and highly addictive form of cocaine, appeared on America's streets six years ago has drug use during pregnancy caught the eye and attention of the nation. Now, with the spotlight being on this important issue, we have the opportunity to build on the momentum to create action.

The good news — if it can be called that — from publicity about crack babies is that drug use during pregnancy is getting increased attention. New studies are beginning to document certain behavioral and neurodevelopmental characteristics seen in children born to women who use drugs during pregnancy.

Despite these studies, however, there is to date no consensus about the effects, the significance, the most appropriate treatment of, or even the number of infants specifically exposed to cocaine during pregnancy. In fact, it is not clear whether the characteristics seen in cocaine-exposed children are actually caused by the cocaine itself, or by other factors associated with poverty such as other drug use, violent/disruptive environments, homelessness, or a combination of these factors.

The lack of an exact understanding of the nature of and impact of crack should not deter the health professionals, educators, policymakers, and parents from taking action on behalf of at-risk families and their children. Whatever the exact effects of the drug, there should be no doubt that programs for drug addicted pregnant women and early intervention programs for vulnerable children can be effective.

The lesson that exposure to crack babies teaches us is that we must provide accessible, comprehensive prenatal care including drug education and treatment if needed to all pregnant women. We must also provide drug-exposed children and families with preventive health and social services which have special educational and developmental

components. These strategies can work especially if we forge strong partnerships between health and education professionals and advocates.

How Big A Problem Is Cocaine-Exposed Children?

Crack cocaine hit America's streets in the mid-1980s. Chemically, cocaine and crack are identical substances; crack is simply a cheaper, concentrated and more easily prepared form of freebase cocaine. It is also cheaper and more readily available than other illicit drugs. Crack is so-named because of the "crackling" sound it makes when it is smoked.

It is extremely difficult to identify the exact number of women who use cocaine during pregnancy. One reason is that pregnant women are often reluctant to admit their own drug use in a society which tends to punish, rather than treat, illegal drug users. The Office of the Inspector General of the United States estimates that 100,000 cocaine-exposed babies are born each year¹, but this figure has been widely disputed.

Some hospitals, usually public general hospitals, have attempted to screen all incoming pregnant women for drug use. However, resulting estimates can be demographically skewed because such hospitals are more likely to serve low-income, at-risk clientele. Furthermore, blood and urine screening tests only uncover cocaine used in the woman's very recent past.

Despite the lack of a sure-fire methodology, attempts continue to quantify the extent of illicit drug use during pregnancy.

- In a Rhode Island study, urine screening of 65% of all pregnant women who delivered in Rhode Island hospitals during the fall of 1989 revealed a 2.6% prevalence of cocaine use during pregnancy.²
- According to a Pinellas County, Florida survey, 3.4% of women attending prenatal care at any of five public health clinics or 12 private obstetrical practices were found to use cocaine.³
- A more recent estimate using the National Institute on Drug Abuse (NIDA) 1990 National Household Survey on Drug Abuse indicates that 4.5% of pregnant women between the ages of 12 and 34 may use cocaine during pregnancy.⁴

1 Office of the Inspector General, Office of Evaluations and Inspections, Department of Health and Human Services. *Crack Babies* (1990). Washington, D.C.: U.S. Government Printing Office.

2 Centers for Disease Control, Atlanta, Georgia. Current trends: Statewide prevalence of illegal drug use by pregnant women - Rhode Island. *Morbidity and Mortality Weekly Report*. (1990) 39:225-227.

3 Chasnoff, I.J., Landress, H.J., and Barrett, M.E. Prevalence of illicit drug and alcohol use during pregnancy and discrepancies in mandatory reporting in Pinellas County, Florida. *New England Journal of Medicine* (1990) 322:1202-1206.

4 Gomby, D. and Shiono, P. Estimating the number of substance-exposed infants. In, *The Future of Children* (1991) 1:17-25; Los Altos, California: Center for the Future of Children, The David and Lucile Packard Foundation.

The NIDA estimate may be the most accurate because it counts both the women who use cocaine only once and those who are frequent and regular users throughout their pregnancies.

How Much Do We Know About Fetal Cocaine Exposure?

Perhaps even more difficult than counting the number of children exposed to cocaine during pregnancy, is ascertaining the effects of that exposure. Many of the descriptions of cocaine-exposed children reported in the popular press are based on anecdotal evidence rather than carefully controlled research. New studies are beginning to document certain developmental and behavioral characteristics in cocaine-exposed children. However, the impact of these characteristics is still not well understood.

The timing and the amount of cocaine exposure plays an important role on its effects on the fetus. Exposure to even a small amount of cocaine during embryo development may result in spontaneous abortion. Similar exposure during the last three months of pregnancy may have a different effect. Meanwhile, chronic exposure or a high dosage of crack at any time during pregnancy may be sufficient to damage the infant's developing brain.

One barrier to understanding the exact impact of cocaine is separating its effects from those of other substances and factors to which the fetus is exposed. Women who use crack-cocaine during pregnancy are statistically more likely to use other drugs such as tobacco and alcohol.⁵ They are also more likely to receive inadequate prenatal care and have poor nutrition. These risk factors also contribute to developmental problems such as those reported in cocaine-exposed children.

Another barrier to fully understanding the impact of cocaine is that often the biological and social effects of the drug may be confounded. The ability of a child to "recover" from cocaine exposure, for instance, depends on both biological and social elements. Studies have documented cocaine use across all socioeconomic lines. But cocaine-exposed children who grow up in poverty are doubly challenged. These children often face additional stresses such as violence, homelessness, and/or a drug culture. In many instances, the mother's drug addiction will remain untreated after the birth of the child and will interfere with her ability to provide attention and love to the child.

Isolating the effects of fetal cocaine exposure and determining the very best strategies for working with cocaine-exposed children and their families will require complex and expensive research. But we cannot afford to wait. There is agreement now that in order to give cocaine-exposed children the best chance to start school healthy and ready to learn, we must begin to provide needed health and education services to the pregnant woman and her child as early as possible.

5 *Ibid.*

Effects in Infancy

Babies born to mothers who use cocaine during pregnancy are more likely to have impaired fetal growth and smaller head sizes than babies born to mothers who do not use drugs during pregnancy.⁶ Infants who are born at low birthweight (less than five and one-half pounds) are, in turn, more likely to die in the first year of life. Poor fetal growth, particularly poor head growth, is also associated with such long term problems as cerebral palsy and learning and developmental disabilities.⁷ Maternal use of tobacco, alcohol and other illicit drugs, undernutrition, chronically stressful lives, or a lack of prenatal care also may be factors in their smaller size.

The reasons for impaired growth are not completely understood. Although most crack-babies are born at full term, some do not achieve their intrauterine growth potential. Fetal growth retardation may result from cocaine's ability to constrict the blood vessels which supply the developing fetus with blood, oxygen, and nutrients. Constriction of the blood vessels supplying the fetal brain may also cause the hemorrhages and cysts which are sometimes seen in the brains of cocaine-exposed infants.⁸ (Such hemorrhages are also present in some prematurely born infants known not to be exposed to cocaine while in utero.) The physiologic causes and long-term consequences of this type of altered blood flow are still unclear.

No withdrawal syndrome has been clearly identified in infants born to cocaine-using women; however, both mothers and caregivers have reported newborns with tendencies to become easily overstimulated or to withdraw.⁹ Some cocaine-exposed infants are described as hypersensitive to touch and sound. They cry when awake, are difficult to console, and do not sleep well. They are sometimes described as jittery because they appear to have difficulty controlling movements of their arms and legs. In contrast, some cocaine-exposed babies seem prone to withdraw — almost as if they must "shut down" in order to tune out an overstimulating environment.

There is speculation that these behaviors may result from damage to the brain's neurotransmitter system which regulates the ability of the brain to send and receive chemical messages. Neurotransmitters influence control of emotions, motivation, self-control and a range of other behavioral functions. It is not known whether these neurochemical effects are transient or permanent.

6 Zuckerman, B., Frank, D., Hingson, R., et al. Effects of maternal marijuana and cocaine use on fetal growth. *New England Journal of Medicine* (1989) 320:762-768.

7 Institute of Medicine. *Preventing Low Birthweight* (1985). Washington, D.C.: National Academy Press.

8 Dixon, S.D., and Bejar, R. Echoencephalographic findings in neonates associated with maternal cocaine and methamphetamine use: Incidence and clinical correlates. *Journal of Pediatrics* (1989) 115:770-778.

9 Chasnoff, I.J., Burns, W.J., Schnoll, S.H., et al. Cocaine use in pregnancy. *New England Journal of Medicine* (1985) 313:666.

The tendency toward over-stimulation and withdrawal of crack-babies can have long-term consequences due to interference with the establishment of loving bonds between parents and their newborns. Most normal newborn infants are able to draw caregivers into mutually satisfying relationships simply with their gazes, gestures, and ability to be consoled. An infant who pulls away and cries ceaselessly when held, or the newborn who retreats readily into an unresponsive state, can test the patience of any caregiver, particularly the parent who does not cope well under stress or a parent still struggling with a drug addiction. Such behavior may cause a parent or caregiver to stop trying to interact. In turn, this mutual "rejection" can prevent the formation of the trusting, loving relationships which are so critical to a child's development.

Both teachers and researchers have reported that cocaine-exposed children seem to have difficulty forming normal attachments with primary caregivers. Some speculate that this has its roots in the tendency toward over-stimulation and withdrawal. On the other hand, many cocaine-exposed children end up being moved from one boarder baby or foster care setting to another. This lack of consistent, loving caregivers may also impede the formation of loving and trusting relationships in the early years.

Effects in the Toddler and Preschool Years

There is no typical "crack child." Some cocaine-exposed children function normally, some have subtle behavioral and learning problems, and some have severe developmental problems.

One of the leading researchers in this area, Dr. Judy Howard of the University of California, Los Angeles' Department of Pediatrics, has studied a sample of 18 full-term and preterm infants born to poor women who used cocaine and other drugs during their pregnancies. The children, who were followed from birth to toddlerhood, were compared to preterm infants from similar environments but who were not exposed to drugs. Developmental scores for both groups were in the low average range, but scores were lower for the drug-exposed group. The drug-exposed children were less securely attached to their caregivers and their play was more constricted, impulsive and less age appropriate than that of the non-exposed toddlers.¹⁰ The significance of these behaviors and the degree of their persistence into childhood are still unknown.

In a preliminary report of children aged three years, the majority (60%) of drug-exposed infants were found to be normal in measures of language and behavior organization, but approximately one-third continued to have problems with expressive language articulation, focusing attention, and organization of their behavior.¹¹

10 Rodning, C., Beckwith, L., and Howard, J. Attachment in play in prenatal drug exposure. *Development and Psychopathology* (1990) 1:277-289.

11 Griffith, D.R. Developmental follow-up of cocaine-exposed infants to three years. Paper presented at the International Society for Infant Studies, Montreal, 1990.

Effects in School Age Children

There is concern that problems experienced by drug-exposed children may not surface until the school years when they begin to take on more complex tasks. Anecdotal reports suggest that some cocaine-exposed children require considerable amounts of teachers' understanding and attention.

The behaviors which have been described in school children seem to parallel those characteristics seen in younger drug-exposed children: difficulty in developing human attachments, an inability to deal with many different stimuli at once, and a tendency to act aggressively or to withdraw completely when overstimulated. Still, educators caution that there is no "typical profile" of a drug-exposed child and that each child must be dealt with according to his or her own strengths and vulnerabilities.

Every Child Healthy and Ready to Learn

Teachers are increasingly being challenged by children with learning and behavior problems which could have been prevented or treated with appropriate health and educational services before reaching the schoolhouse door. Crack-cocaine is a factor to be reckoned with in this equation. How to alleviate the problem is something health and education professionals must address.

One immediate solution is the care and treatment of pregnant women addicted to drugs. Currently, numerous barriers prevent pregnant women from obtaining the drug treatment services they need. Primary among them is the paucity of programs that accept drug-addicted pregnant women, especially those with dependent children. Less than one percent of the federal drug prevention budget is dedicated to programs for pregnant women.

Another barrier is the threat of punitive measures such as jail or removal of other children from the home, actions which have been taken against pregnant, drug-addicted women. These types of reactive measures dissuade women from seeking prenatal care and drug treatment and, ultimately, harm those they are designed to protect. Other factors such as cost, lack of outreach, lack of transportation, and long waiting lists discourage pregnant women and mothers with young children from seeking care. And, for children born already exposed to drugs, treatment also must be universally accessible.

What Can We Do?

For the Pregnant Drug-Addicted Woman

Pregnant drug-addicted women need available, affordable, and accessible drug treatment. Universal access to comprehensive prenatal care — including drug treatment when needed — must be the rule, and not the exception. The large gap between the number of women who could benefit from drug treatment and the number of residential and outpatient slots currently available must be decreased.

A number of federal program expansions also have been suggested by the U.S. General Accounting Office. These suggestions include:

- increasing the Alcohol, Drug Abuse, and Mental Health Administration's (ADAMHA) Alcohol, Drug Abuse, and Mental Health Services (ADMS) Block Grant to the states in order to provide more federal support for drug treatment;
- increasing the ADMS women's set-aside from 10 percent to a higher percentage to assure that expanded treatment services under the block grant are targeted specifically to drug-addicted pregnant women;
- requiring states to include substance-abuse treatment as part of the package of services available to pregnant women under Medicaid; and
- assuring a range of services specifically designed to meet the needs of women, pregnant women, and mothers with young children are made available to those in need.^{12,13}

For the Children

A variety of strategies are available for improving the outcomes for children born with prenatal drug exposure. Some children will require special educational services in

12 United States General Accounting Office, *Drug-Exposed Infants: A Generation at Risk* (June 1990) GAO/HRD-90-138.

13 United States General Accounting Office, *ADMS Block Grant: Women's Set-Aside Does Not Assure Drug Treatment for Pregnant Women* (May 1991), GAO/HRD-91-80.

addition to health and social services. According to Dr. Judy Howard, "The problem is not that crack-exposed children will never reach their full educational potential. Rather, the problem is that many of these children cannot learn in the typical classroom; however, given the proper school environment...with a low adult/child ratio, strong emotional support, and conscious efforts by teachers to form emotionally satisfying attachments with the children...these children respond."¹⁴

Recognizing the special educational needs of this group of children, some school districts have begun to implement teaching programs designed especially for cocaine-exposed children — but as yet, only a handful of such programs exist. One specialized program has been developed and implemented by the Los Angeles Unified School District at the Salvin Special Education Center. The Center includes a preschool for 3-year-old crack-exposed children and a pre-kindergarten for similarly exposed 4-year-old children. The purpose of the program is not to isolate drug-exposed children from their non-exposed classmates, but instead to develop teaching strategies that will help them learn within a regular educational setting.

Teachers at the Salvin Special Education Center have found that early intervention and individual attention are crucial. There are no more than eight children in each class with one teacher and two assistants. The Center has truly integrated the health and education of its students. The school has its own pediatricians, psychologists, social workers, and speech and language specialists to help meet the health and developmental needs of its students. This transdisciplinary approach to teaching is successful only with a substantial amount of time devoted to coordination between the various caregivers. All the individuals involved in providing the health and education services meet regularly to discuss each child's progress.¹⁵

Providing early special health and education services to vulnerable young children can be expensive — but not as expensive as letting these children fall through the cracks and fail.

There are many programs with proven track records which are being used to achieve the President's and the Governors' Education Goal #1: "By the year 2000, all children in America will start school ready to learn." Unfortunately funding for health and education programs such as Head Start, preventive prenatal and pediatric care, and treatment and rehabilitation programs for substance-abusing women, programs which will help our nation to accomplish this goal, is woefully lacking. Likewise funding for establishing or replicating model programs, even those with proven track records, is often piecemeal.

14 Howard, Judy, as quoted in, "Crack Babies in School", *The American School Board Journal* (May 1990): 21.

15 Los Angeles Unified School District, Division of Special Education, Pre-Natally Exposed to Drugs (PED) Program, Salvin Special Education Center. *Basic Assumptions When Working With Children Prenatally Exposed to Drugs and Today's Challenge: Teaching Strategies for Working With Young Children Pre-Natally Exposed to Drugs/Alcohol* (July 1989).

Some policy strategies which can help save money that would otherwise be spent on more costly intervention after the child is enrolled in school include:

- considering crack-exposed children as part of the "at-risk" group who can be eligible for services under the The Individuals With Disabilities Act (IDEA) as amended in 1986 by PL 99-457;
- ensuring that Head Start programs have the ability and resources to address the needs of crack-exposed children and their parents/caregivers;
- making teachers aware, throughout their training, of the social environment of the children they will be teaching and of community resources available to them for helping these children; and
- ensuring universal access to comprehensive health and social services designed to serve children and their families are available, accessible, and coordinated between the health and education systems.

Conclusion

Drug addiction during pregnancy is not a new phenomenon. But crack-cocaine has created an opportunity for those individuals working on behalf of children and families to draw national attention to this important issue. Children who have been prenatally exposed to cocaine are not a doomed population. Early educational and psychosocial intervention can help ensure that cocaine-exposed children will enter school ready to learn and prepared to achieve their educational potential. Better still, making comprehensive prenatal care, including drug education and treatment, accessible to all pregnant women will help ensure that children are born healthy.

It is easy to get angry and frustrated when dealing with the issue of drugs and pregnancy. The tendency is to want to blame someone, most likely the pregnant woman, for creating this awful situation. While it is easy to point fingers, it is not easy to get to the root cause of drug addiction and what would bring a pregnant mother to the point of engaging in behaviors dangerous to her and the baby. But rather than spend the time blaming and finger pointing, it is important to use whatever energy is available and channel it into solution-making. In the end, it is the solutions that will make the biggest difference.

As the National Health/Education Consortium has stated repeatedly, health and education are inextricably connected. The earlier we provide the necessary health, social services, and educational interventions to the people that need them, the lower will be the future economic and social costs of the lost potential of at-risk children. While our knowledge about what works for cocaine-exposed children is still limited, we do know how to help at-risk children. Time is of the essence — we cannot wait to translate that knowledge into action and foster the national will to improve the lives of all of our nation's families.

National Health/Education Consortium Members and Profiles

- American Academy of Family Physicians:** 66,000 physicians
- American Academy of Pediatrics:** 39,000 physicians
- American Association of Colleges for Teacher Education:** represents 700 member institutions teacher education programs
- American Association of School Administrators:** 18,517 school administrators
- American College of Nurse-Midwives:** 3,000 certified nurse-midwives
- American College of Obstetricians and Gynecologists:** 29,848 obstetricians and gynecologists
- American Federation of Teachers:** 750,000 teachers, para-professionals (teacher aides), school-related personnel, healthcare workers, federal and state employees
- American Hospital Association (MCH Section):** 5,870 hospitals and physicians
- American Indian Health Care Association:** represents 36 programs and clinics which focus on the health care of American Indians
- American Medical Association:** 300,000 physicians
- American Nurses Association:** 201,000 registered nurses
- American Public Health Association:** 30,977 physicians, nurses, therapists, health technicians, health support personnel, and other health professionals
- American School Health Association:** 3,000 health educators, nurses, physicians, and dietitians
- Association of American Medical Colleges:** 126 U.S. medical schools, 450 teaching hospitals, and 92 academic professional societies
- Association of Maternal and Child Health Programs:** represents 269 maternal and child health programs and their directors
- Association of Schools of Public Health:** represents 13,000 deans, faculty, and students of schools of public health
- Association of State and Territorial Dental Directors:** represents 58 state and territorial dental directors.
- Association of State and Territorial Health Officials:** represents the 58 health officers from each of the United States and its territories.
- Association for the Care of Children's Health:** 4,200 nurses, child life workers, and parent leaders
- Association for Supervision and Curriculum Development:** 153,000 teachers, school administrators, college professors, and school board members
- Council of Chief State School Officers:** represents 56 public officials who head departments of elementary and secondary education in each state and extrastate jurisdiction
- The Council of Great City Schools:** represents 46 of the largest urban public school districts in the United States
- Healthy Mothers, Healthy Babies Coalition:** represents 95 non-profit health education groups, and state and local education groups

- NAACOG (The Organization for Obstetric, Gynecologic and Neonatal Nurses):** 24,000 nurses
- National Alliance of Black School Educators:** 3,000 African-American teachers for Grades K-12
- National Association for Asian and Pacific American Education:** 594 members representing administrators, teachers, institutional aids, social workers, mental health workers, and students among others
- National Association of Children's Hospitals and Related Institutions:** represents 108 hospitals
- National Association of Community Health Centers:** represents 600 health care facilities
- National Association for the Education of Young Children:** 77,000 members representing a wide range of early childhood professionals
- National Association of Elementary School Principals:** 36,000 elementary school principals, middle school principals, school superintendents, teachers, professors, and instructors
- National Association of Hispanic Nurses:** 1,000 Hispanic nurses
- National Association for Partners in Education:** 5,500 volunteers, presidents and executives of private businesses, teachers, and administrators
- National Association of Pediatric Nurse Associates and Practitioners:** 2,800 pediatric nurse associates and practitioners
- National Association of School Nurses, Inc.:** 5,800 school nurses
- National Association of Secondary School Principals:** 41,000 secondary school principals, administrators, guidance counselors, activities directors, and college professors
- National Association of Social Workers, Inc.:** 137,763 members in all fields of social work
- National Association of State Boards of Education:** represents 600 state boards of education and their members
- National Black Nurses Association:** 7,000 African-American nurses
- National Center for Clinical Infant Programs:** represents 7,500 programs for high risk children and families, as well as individuals
- National Coalition of Hispanic Health and Human Services Organizations (COS-SMHO):** 700 organizations serving the Hispanic population, representing Hispanic physicians, nurses, and students
- National Community Education Association:** 1,600 teachers, superintendents, administrators, community education directors and coordinators, faculty and administrators of teacher education institutions and programs, community activists, private businesses, and state administrators
- The National Congress of Parents and Teachers:** 6.8 million parents, K-12 classrooms teachers, principals, school administrators, and students
- National Education Association:** 2 million K-12 classroom teachers, professors, educational support personnel, and students
- National Head Start Association:** 150 nationwide agency members and 30 individual members
- National Medical Association:** 16,000 minority physicians

National Mental Health Association: 550 local affiliate mental health associations representing mental health care providers, clients, and community health care centers

National Perinatal Association: 6,000 physicians, nurses, nurse-midwives, social workers, and consumers of perinatal services

National Rural Health Association: represents 1,750 community, migrant, and homeless health centers and their staffs

National School Boards Association: represents 52 state school board associations

National School Public Relations Association: 2,200 teachers, principals, administrators, retired teachers, students, and public relations personnel

Society for Neuroscience: represents 18,000 neuroscientists

National Health/Education Consortium

Good health is a significant determinant of a child's ability to learn and succeed in school. The health and education sectors, however, have historically approached programs and services for children from different perspectives. Recognizing the need for better integration of health and education programs for children, the National Commission to Prevent Infant Mortality and the Institute for Educational Leadership organized the NATIONAL HEALTH/EDUCATION CONSORTIUM.

The project has brought together leaders from 51 national health and education organizations, representing over 11 million constituents, to bridge the separate worlds of health and education into unified action for children. Promoting the full potential of children and providing them with the best opportunities for success will require changes in the systems which currently provide health and education services. Reforms are needed to develop more collaborative and cohesive policies, unify agencies and funding streams, and provide a more comprehensive approach to children's programs.

The Consortium's activities focus on three major goals: to improve public policy in addressing the need for a better coordinated health and education delivery system; to strengthen communication and dissemination of information between health and education programs and policymakers; and to identify exemplary program models and practices which integrate health and education. Toward this end, Consortium members are working to identify a series of action steps to implement these objectives at the federal, state and local levels. The Consortium will be involving educators, health professionals, policymakers, administrators, advocates and parents in its efforts to bring together the health and education communities in a more integrated fashion.

The NATIONAL HEALTH/EDUCATION CONSORTIUM began in May 1990. The foundation of the Consortium's efforts can be found in the report, *Crossing the Boundaries between Health and Education*, which documents clinical research and programs that exemplify the relationship between children's health and their learning potential. To complement this report, the Consortium is releasing a series of papers which focus on various topics relating to health and education.

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